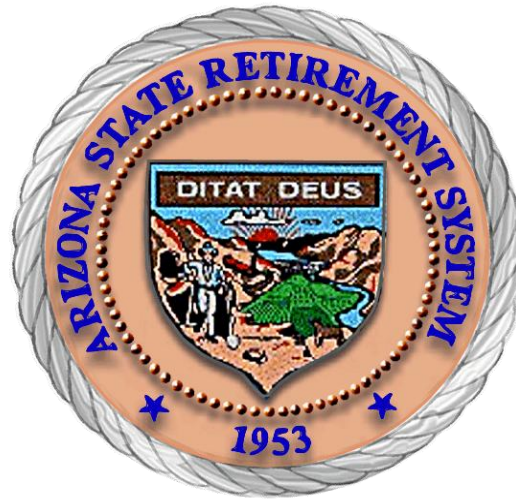


Arizona State Retirement System Board



Real Estate Asset Class Review

Gary R. Dokes, Chief Investment Officer
Eric Rovelli, Real Estate Portfolio Manager
Micolyn Yalonis, Townsend Group

November 21, 2008

Discussion Items

	<u>Page #</u>
• Real Estate Program Overview	3
• Real Estate Program Activities	4
• Real Estate Program Snapshot	5
• Portfolio Performance	6
• Property Type and Geographic Diversification	7
• ASRS Owner/Occupied Properties	8
• Real Estate Market Themes (Townsend)	10

ASRS Real Estate Program - Overview

- Represents 6% +/- 2% of ASRS strategic asset allocation policy
- Invests in public and private, core and non-core U.S. and international institutional real estate markets
- Program Objectives: Achieve attractive risk-adjusted return, enhance diversification of ASRS' investment program
- Return expectation
 - NPI + 1%
 - 9% net (1% over the ASRS Actuarial 8% rate of return)
- Major Program Constraints

Component	Minimum/Maximum Exposure	% of Portfolio F&C as of 6/30/08 ¹
Total Core	Minimum 20%	16%
Public Securities	Maximum 30%	9%
Total Non-Core	Maximum 80%	84%
International	Maximum 30%	22%
Leverage	Maximum 65%	55%
¹ Percentages representative of private assets only, except for public securities		

Program Activities

During FY08 (Jul1 07-Jun30 08)

- Thirteen (13) real estate mandates awarded with commitments totaling \$650 million

Manager	Strategy	Commitment
CBRE Strategic Partners US Value Fund V	Non-Core Enhanced Return	\$ 50,000,000
CBRE Strategic Partners Opportunity Fund V	Non-Core High Return	\$ 50,000,000
Lone Star Real Estate Fund	Non-Core High Return	\$ 25,000,000
Lone Star Fund VI	Non-Core High Return	\$ 75,000,000
Capmark Commercial Realty Partners III	Non-Core Enhanced Return	\$ 50,000,000
Westbrook Real Estate Fund VIII	Non-Core High Return	\$ 50,000,000
Tishman Speyer Real Estate Venture VII	Non-Core High Return	\$ 50,000,000
Rothschild FARS V	Non-Core High Return	\$ 50,000,000
Five Mile Capital Partners II	Non-Core High Return	\$ 50,000,000
Prudential Latin America Residential Fund III	Non-Core High Return	\$ 50,000,000
AIG Asian Realty Partners II	Non-Core High Return	\$ 50,000,000
Blackstone Real Estate Partners VI	Non-Core High Return	\$ 50,000,000
CIM Real Estate Fund III	Non-Core High Return	\$ 50,000,000

- Reallocated US public REIT securities to two global real estate securities managers

Manager	Funding Date	Funded Amounts
European Investors	8/31/2007 & 10/31/2007	\$61,141,111 & \$10,000,000
LaSalle Investment Management Securities	8/31/2007 & 11/30/2007	\$77,523,773 & \$10,459,122

During FY09 (Jul1 08 to present)

- Awarded commitments to two (2) new real estate manager totaling \$200 million

Manager	Strategy	Commitment
Open-End Fund	Core	\$ 150,000,000
Follow-On Fund II	Non-Core High Return	\$ 50,000,000

ASRS RE Program Snapshot as of November 13, 2008

REAL ESTATE INVESTMENTS:	MARKET VALUES*	% PORTFOLIO	COMMITTED NOT YET FUNDED	TOTAL FUNDED/COMMITTED	% PORTFOLIO	Policy Allocation
Core - Private						
Open-End Fund	\$ -		\$ 150,000,000	\$ 150,000,000		
Hines US Core Office Fund	\$ 21,158,520			\$ 21,158,520		
CIM Urban REIT	\$ 54,058,906		\$ 34,115,933	\$ 88,174,839		
	\$ 75,217,426	11.43%	\$ 184,115,933	\$ 259,333,359	16.43%	
Core - Public						
European Investors	\$ 35,178,766			\$ 35,178,766		
LaSalle Investment Management	\$ 44,133,646			\$ 44,133,646		Core Public
	\$ 79,312,412	12.05%	\$ -	\$ 79,312,412	5.02%	Max 30%
Total Core:	\$ 154,529,838	23.49%	\$ 184,115,933	\$ 338,645,771	21.45%	Total Core Min 20%
Non Core - Enhanced Return						
CBRE Strategic Partners Value Fund V	\$ 3,165,831		\$ 46,834,169	\$ 50,000,000		
Capmark Commercial Realty Partners III	\$ 30,292,795		\$ 19,707,205	\$ 50,000,000		
Heitman Value Partners II	\$ 13,425,625		\$ 36,088,125	\$ 49,513,750		
PRISA II	\$ 42,081,967		\$ 26,132,000	\$ 68,213,967		
AEW Value Investors II	\$ 19,340,294		\$ 35,176,650	\$ 54,516,944		
	\$ 105,140,681	15.98%	\$ 117,103,980	\$ 222,244,661	14.08%	
Non Core - High Return						
Lone Star Fund VI	\$ 57,223,163		\$ 17,776,837	\$ 75,000,000		
Lone Star Real Estate Fund	\$ 8,707,401		\$ 16,292,599	\$ 25,000,000		
CBRE Strategic Partners Opportunity Fund V	\$ 5,629,619		\$ 44,370,381	\$ 50,000,000		
PLA Residential Fund III	\$ 5,757,052		\$ 44,242,948	\$ 50,000,000		
Five Mile Capital Partners II	\$ 11,000,000		\$ 39,000,000	\$ 50,000,000		
AIG Asian Real Estate Partners II	\$ 3,849,145		\$ 46,150,855	\$ 50,000,000		
Westbrook Partners Real Estate Fund VII	\$ 8,187,150		\$ 35,113,160	\$ 43,300,310		
Westbrook Partners Real Estate Fund VIII	\$ -		\$ 50,000,000	\$ 50,000,000		
CIM Real Estate Fund III	\$ 1,771,204		\$ 48,693,255	\$ 50,464,459		
Blackstone Real Estate Partner VI	\$ 20,860,636		\$ 27,142,513	\$ 48,003,149		
Colony Investors VIII	\$ 33,094,045		\$ 12,898,676	\$ 45,992,721		
Carlyle Realty Partners Fund V	\$ 29,150,204		\$ 24,921,300	\$ 54,071,504		
Rothschild FARS IV	\$ 49,295,154		\$ 31,851,534	\$ 81,146,688		
Rothschild FARS V	\$ 6,276,326		\$ 43,723,674	\$ 50,000,000		
Tishman Speyer Real Estate Venture VI	\$ 22,900,164		\$ 2,881,292	\$ 25,781,456		
Tishman Speyer Real Estate Venture VII	\$ 22,965,351		\$ 25,661,352	\$ 48,626,703		
RREEF Global Opportunities Fund II	\$ 49,076,825		\$ -	\$ 49,076,825		
PLA Retail Fund I	\$ 25,136,301		\$ 45,168,539	\$ 70,304,840		
Dune Real Estate Fund I	\$ 37,440,700		\$ 13,500,000	\$ 50,940,700		
Follow-On Fund II	\$ -		\$ 50,000,000	\$ 50,000,000		
	\$ 398,320,439	60.54%	\$ 619,388,916	\$ 1,017,709,355	64.47%	
Total Non-Core:	\$ 503,461,120	76.51%	\$ 736,492,896	\$ 1,239,954,016	78.55%	Non-Core Max 80%
Total ASRS Real Estate Portfolio:	\$ 657,990,958		\$ 920,608,829	\$ 1,578,599,787		
As a % ASRS Market Value of \$21 billion	3.13%			7.52%		

*Market values for Hines, CIM Urban REIT, Heitman II, PRISA II, AEW II, Westbrook VII, CIM III, Blackstone VI, Colony VIII, Carlyle V, FARS IV, Tishman Speyer VI, Tishman VII, RREEF, PLA Retail Fund I and Dune are as of 3/31/08 per The Townsend Group and include any fundings between 4/1/08 through 11/13/08.

*Market values for CBRE Value V, CBRE Opportunity V, Capmark III, Lone Star VI, LSREF, PLA Residential III, Five Mile II, AIG Asia II and FARS V equal funded amounts through 11/13/08. Updated financial reporting is not yet available.

*European Investors and LaSalle Investment Management market values is as of 10/31/08.

Note: The current allocation reflects temporary imbalances that will be reduced in the future as the portfolio moves towards full allocation.

Currently in legal due diligence

Real Estate Program Performance as of June 30, 2008

Portfolio Performance		
	1 Year	Since Inception ⁴
Total ASRS Real Estate Portfolio ³	-11.7%	7.3%
Total ASRS Real Estate Portfolio - Excluding REITS	-3.9%	13.9%
Plan Benchmarks		
	1 Year	Since Inception
NPI + 100 BPS ^{1,2}	10.2%	15.6%
Constant 9% ¹	9.0%	9.0%

Primary Performance contributors

- Exposure to Core Public REITs. REITS materially under-performed private real estate market returns.
- J-curve effect in Non-Core investments. Anticipated during initial funding periods and early value creation phase.

Note: NPI benchmark does not include Public REITS; NPI typically lags in its write down of assets which are anticipated to occur in the 4th quarter 2008.

Notes

¹ The ASRS return objective for the real estate portfolio is a NET return of NPI+100bps and a constant 9%. NPI+100bps represents a near term, 5-7 year, total portfolio risk adjusted return expectation

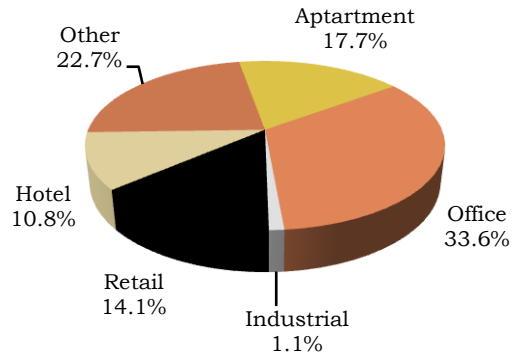
² NPI is the NCREIF Property Index which represents an appraisal based index of institutionally owned unlevered core real estate and does not capture the affects of the "J-curve" associated with non-core, opportunistic investing

³ Per the September 30, 2008 Mercer Report (Real Estate lags by one quarter)

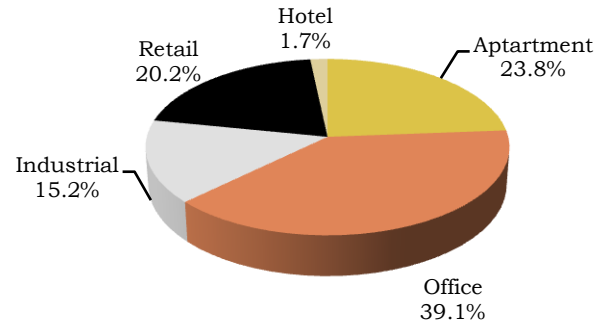
⁴ Inception date of performance is 10/1/05

Property Type and Geographic Diversification as of June 30, 2008

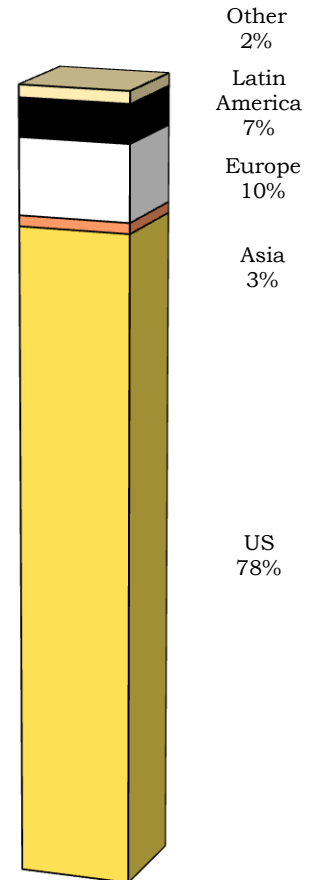
ASRS Property Type Diversification - US Private Only Portfolio



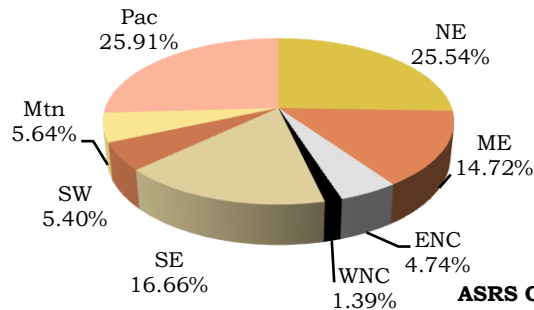
NCREIF Property Type Diversification



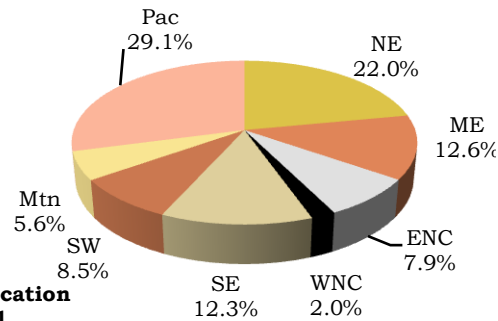
ASRS International Diversification by Region



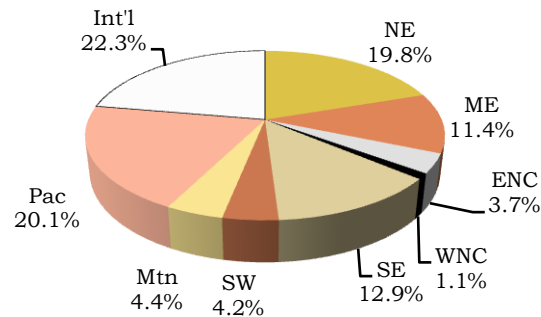
ASRS Geographic Diversification - US Private Only Portfolio



NCREIF Geographic Diversification



ASRS Geographic Diversification US and International



Note: NCREIF diversification is only shown as a general reference point as the ASRS real estate program objective does not intend to replicate the NCREIF Index

Over/underweights relative to NCREIF may be taken by the Real Estate Committee as it believes is warranted to achieve the program objective

NCREIF – National Council of Real Estate Investment Fiduciaries (6,118 properties with a total market value of over \$333 billion as of June 30, 2008)

ASRS Owner/Occupied Properties

Physical	3300 Tower	JV Land	Broadway Proper
Location	Phoenix	Phoenix	Tucson
Property Type	High Rise Office	Vacant Land	Suburban Office
# Stories	26	-----	3
Bldg Sq. Ft.	363,655	-----	52,875
Land Sq. Ft.	224,200	69,531	200,304
Parking Spaces	1,053	-----	253
Occupancy % (5/31/07)	90.5%	-----	82.1%
(9/30/08)	94.7%		85.6%

ASRS Owner/Occupied Properties

3300 Tower (Phoenix)

- Increasing occupancy rates, 6/30/07 – 90.7% and 9/30/08 – 94.7%, though general market conditions and tenant activity have slowed with the overall economy. Sub-market occupancy is 86.9%
- Significantly higher rental rates in sub-market and at property over the past twelve months; however, rent growth is turning negative. Average asking lease rates have decreased from \$23.49 one year ago to \$22.68 today. A 3.5% decrease
- Concessions are increasing as the metropolitan Phoenix market has experienced negative absorption of 120,434 sq. ft. in the first half of 2008
- Sub-market fundamentals: Negative net absorption of 91,431 sq. ft. since 4th quarter 2007. Vacancies have increased to 16.3% from 14% as of 6/30/08.
- Low near-term rollover
 - 2009 – 11.46%
 - 2010 – 9.21%

Broadway Proper (Tucson)

- Suburban Garden Office
- Rents have held steady in over past 12 months, though tough economy should put pressure on rents over the next 12 months
- Though rising vacancy rates and reduced absorption in sub-market, occupancy at the project has risen from 82.1% as of 6/30/07 to 85.6% as of 9/30/08. Sub-market occupancy is at 86.0%
- In process of replacement and repairs of wood beams, stairwells and guardrails, painting the entire project
- Focus on in-process capital projects, increasing occupancy during the balance of 2008 and 2009 and renewing near-term rollover tenants with longer term leases

Real Estate Global Themes – The Townsend Group

- Credit Crisis and Weakening Fundamentals
 - *Credit Crisis*
 - Sources declining since summer 2007
 - Lack of confidence has virtually seized debt markets
 - Acute deleveraging underway across the globe
 - *Weakening Fundamentals*
 - Lack of credit has finally dragged down global economy
 - Rising unemployment
 - Waning consumer confidence
- Developed Markets
 - *Modest reported price adjustments*
 - UK adjustments ahead of US; vary by property type in Japan
 - Limited transactions impede price adjustments
 - Thus far, NOI remains stable
 - Signs of further adjustments
 - Implied public cap rates
 - Derivative transactions
 - Secondary discounts
 - Consensus for Core decline of 20% peak to trough
 - Weakening fundamentals
- Emerging Markets
 - *Global slow down*
 - Varies by country but not decoupled
 - Declining values; expanding cap rates
 - Limited to no debt

Real Estate Global Themes – The Townsend Group

- Primary Risks
 - *Sponsor stability*
 - *Deep and long term global downturn*
 - *Protracted credit crisis*
 - *Isolated over-supply*
 - *Foreign-exchange risk*
 - *Resurgence of inflation*
 - *Emerging market risks*
 - Political, legal, conflict, transparency
- Investment Implications
 - *Overweight strategies that rely on dislocation*
 - *Underweight core, core plus, value add at appraised prices*
 - *Avoid pre-specified assets*
 - *Underweight new development*
 - *Invest slowly*
 - *Improve terms*
- Changing Execution
 - *'Out of the box' investments*
 - *Move with market*